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(54) Glucose related measurement method and apparatus.

57) A method of and apparatus for determining stable and labile glycated compound levels in blood. Electromagnetic energy covering a multiplicity of wavelength bands within a wavelength range from 380 nm to 2500 nm is directed into a sample volume containing blood. Portions of the energy representative of both the source energy and energy after interacting with material within the sample volume are collected. The energy portions carry information relating to the source energy and the levels of labile and stable compounds within the sample volume, respectively. The portions are converted into electrical signals representative of the intensities of the respective portions in each of the multiplicity of wavelength bands. The electrical signals are pretreated in accordance with known information to remove deviations from established reference conditions to form data signals that are a function of the fractional portion of the energy in each of the wavelength bands absorbed and scattered by the material in the measurement volume. Selected groups of the data signals are processed in accordance with chemometric models developed from analysis of such data signals together with known values of the analytes derived from measurements on a calibration set of samples larger in number than the number of wavelength bands included in the set of the selected groups of data signals to develop analyte signals representative of the amounts of glycated compounds for which chemometric models have been developed and utilized. The analyte signals may be stored and displayed in a form suitable for medical use.

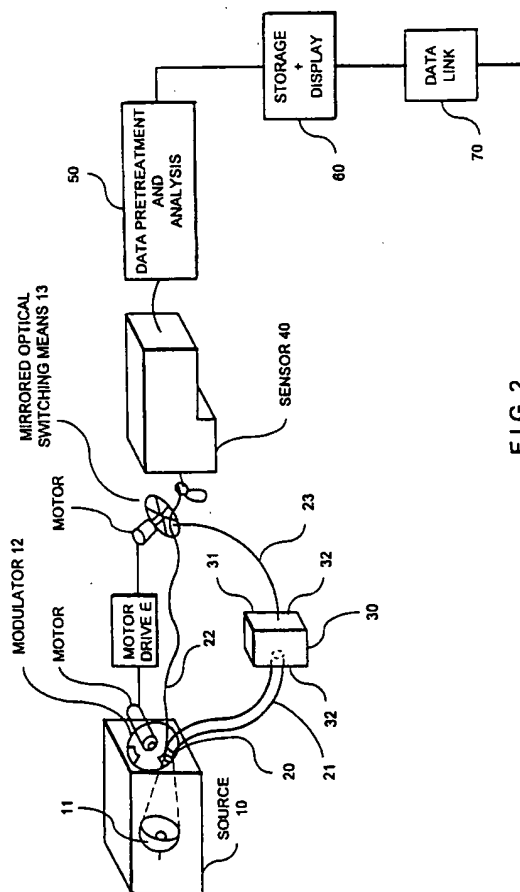


FIG. 2



European Patent
Office

EUROPEAN SEARCH REPORT

Application Number
EP 94 10 8398

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cls)
A	EP-A-0 222 419 (INST.BIOINGENERIA) 20 May 1987 * column 1 - column 4 *	1,6,11, 17,20,21	A61B5/00 G01N21/35
A,D	US-A-5 204 532 (ROSENTHAL) 20 April 1993 ---	1,6,11, 17,20,21	
A,D	US-A-4 975 581 (ROBINSON) 4 December 1990 COL.9-10;15-17 ---	1,6,11, 17,20,21	
A,D	US-A-5 077 476 (ROSENTHAL) 31 December 1991 * column 3 - column 6 *	1,6,11, 17,20,21	
A	APPLIED SPECTROSCOPY, vol.46, no.10, 1 October 1992 pages 1575 - 1578 HAALAND ET AL. 'REAGENTLESS NEAR INFRARED DETERMINATION, ETC.'	1,11	
			TECHNICAL FIELDS SEARCHED (Int.Cl.5)
			G01N A61B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 21 April 1995	Examiner Boehm, C
<p>CATEGORY OF CITED DOCUMENTS</p> <p>X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document</p> <p>T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application I : document cited for other reasons & : member of the same patent family, corresponding document</p>			

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